

Serial No. 10/735,768
Amdt. dated December 28, 2006
Reply to Office Action of September 29, 2006

Docket No. P-0498

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for compensating for synchronization errors comprising:

sending a first initial synchronization message by a first device to a second device;
sending a second initial synchronization message by the second device to the first
device at substantially the same time as the sending of the first initial synchronization message
and before the first synchronization message is received at the second device; and

synchronizing a first the first device and a second the second device, wherein by
compensating for synchronization errors, if errors when the first device and the second device
both initiate said initial synchronizing messages at substantially the same time.
2. (Original) The method of claim 1, wherein the first device and the second device
are wireless devices.
3. (Original) The method of claim 2, wherein:

the first device is a user equipment device; and

the second device is a universal mobile telecommunications system terrestrial access network device.

4. (Currently Amended) The method of claim 1, wherein said compensating for synchronization errors comprises canceling ~~a second~~ the second initial synchronization message; ~~if message.~~

~~the first device prepares a first initial synchronization message for transmission to the second device;~~

~~the first device transmits the first initial synchronization message;~~

~~the second device prepares the second initial synchronization message for transmission to the first device; and~~

~~the second device receives the first initial synchronization message prior to transmitting the second initial synchronization message to the first device.~~

5. (Original) The method of claim 4, wherein the first initial synchronization comprises first uplink information.

6. (Original) The method of claim 5, wherein the uplink information comprises an uplink hyper frame number of the first device.

7. (Original) The method of claim 4, wherein the first initial synchronization message and the second initial synchronization message are RESET PDUs.

8. (Currently Amended) The method of claim 1, wherein said compensating for synchronization errors comprises:

incrementing upload information and download information in the first device and the second device only if:

the first device sends ~~a first~~the first initial synchronization message to the second device, wherein the first initial synchronization message comprises the upload information, and the second device is set to the upload information;

the second device sends ~~a second~~the second initial synchronization message to the first device prior to receiving the first initial synchronization message, wherein the second initial synchronization message comprises the download information, and the first device is set to the download information;and

the second device sends a first acknowledgment synchronization message to the first device in response the first initial synchronization message, wherein the first acknowledgement message comprises the download information, and the first device is set to the download ~~information;~~information.

~~and the second device sends a first acknowledgment-synchronization message to the first device in response the first initial synchronization message, wherein the first acknowledgement message comprises the download information, and the first device is set to the download information.~~

9. (Currently Amended) The ~~apparatus~~ method of claim 8, wherein incrementing upload information and download information in the first device and the second device is incrementing upload information and download information in the first device and the second device by 1.

10. (Original) The method of claim 8, wherein at least one of:
the uplink information comprises an uplink hyper frame number of the first device; and
the downlink information comprises a downlink hyper frame number of the second device.

11. (Original) The method of claim 8, wherein at least one of:
the first initial synchronization message and the second initial synchronization message are RESET PDUs; and

the first acknowledge synchronization message and the second acknowledge synchronization are RESET ACK PDUs.

12. (Currently Amended) The method of claim 1, wherein said compensating for synchronization errors comprises:

incrementing only the upload information in the second device and incrementing only the downlink information in the first device only if:

the first device sends ~~a first~~ the first initial synchronization message to the second device, wherein the first initial synchronization message comprises the upload information, and the second device is set to the upload information;

the second device sends ~~a second~~ the second initial synchronization message to the first device prior to receiving the first initial synchronization message, wherein the second initial synchronization message comprises the download information, and the first device is set to the download information;

the second device sends a first acknowledgment synchronization message to the first device in response the first initial synchronization message, wherein the first acknowledgement message comprises the download information, and both the uplink information and the downlink information set in the second device are incremented; and

the first device sends a second acknowledgment synchronization message to the second device in response the second initial synchronization message, wherein the second acknowledgement message comprises the upload information, and both the uplink information and the downlink information set in the first device are incremented;

the first device is set to the download information upon receipt of the first acknowledgment synchronization message; and

the second device is set to the uplink information upon receipt of the second acknowledgment synchronization message.

13. (Currently Amended) The ~~apparatus~~ method of claim 12, wherein incrementing upload information or incrementing the download information is incrementing the upload information or incrementing the download information by 1.

14. (Original) The method of claim 12, wherein at least one of:

the uplink information comprises an uplink hyper frame number of the first device; and

the downlink information comprises a downlink hyper frame number of the second device.

15. (Original) The method of claim 12, wherein at least one of:
- the first initial synchronization message and the second initial synchronization message are RESET PDUs;
 - and the first acknowledge synchronization message and the second acknowledge synchronization are RESET ACK PDUs.
16. (Currently Amended) The method of claim 1, wherein said compensating for synchronization errors comprises:
- incrementing only the upload information in the second device and incrementing only the downlink information in the first device only if:
 - the first device sends ~~a first~~ the first initial synchronization message to the second device, wherein the first initial synchronization message comprises the upload information, and the second device is set to the upload information;
 - the second device sends ~~a second~~ the second initial synchronization message to the first device prior to receiving the first initial synchronization message, wherein the second initial synchronization message comprises the download information, and the first device is set to the download information;
 - both the uplink information and the downlink information set in the second device are incremented, the second device sends a first acknowledgment synchronization

message to the first device in response the first initial synchronization message, and wherein the first acknowledgement message comprises the incremented download information set in the second device; and

both the uplink information and the downlink information set in the first device are incremented, the first device sends a second acknowledgment synchronization message to the second device in response the second initial synchronization message, wherein the second acknowledgement message comprises the incremented upload information set in the first device, and;

the first device is set to the download information upon receipt of the first acknowledgment synchronization message; and

the second device is set to the uplink information upon receipt of the second acknowledgment synchronization message.

17. (Currently Amended) The ~~apparatus~~method of claim 16, wherein incrementing upload information or incrementing the download information is incrementing the upload information or incrementing the download information by 1.

18. (Original) The method of claim 16, wherein at least one of:

the uplink information comprises an uplink hyper frame number of the first device; and

the downlink information comprises a downlink hyper frame number of the second device.

19. (Original) The method of claim 16, wherein at least one of:

the first initial synchronization message and the second initial synchronization message are RESET PDUs; and

the first acknowledge synchronization message and the second acknowledge synchronization are RESET ACK PDUs.

20. (Canceled)

21. (Currently Amended) A system for compensating for synchronization errors comprising:

a first device, the first device sending a first initial synchronization message; and

a second ~~device; and~~ device, the second device sending a second initial synchronization message to the first device at substantially the same time as the sending of the

first initial synchronization message and before the first synchronization message is received at the second device,

wherein the first device and the second device each include~~a means~~means for compensating for synchronization errors during synchronization of the first device and the second ~~device, if device~~ when the first device and the second device both initiate said synchronizing at substantially the same time.

22. (Currently Amended) A failsafe radio link control (RLC) reset method between two RLC peer entities, comprising:

independently determining at both of the two RLC peer entities whether or not a RLC reset is required between the two RLC peer entities;

independently initiating, at substantially the same time, a RLC reset procedure at each of the two RLC peer entities if it is determined by each of the two RLC peer entities that a RLC reset is required; and

synchronizing the two RLC peer entities without a synchronization failure.

23. (Original) The failsafe RLC reset method of claim 22, wherein each of the two RLC peer entities has a pair of hyper frame numbers (HFNs).

24. (Currently Amended) The failsafe RLC reset method of claim 23, wherein initiating a RLC reset procedure at each of the two RLC entities includes:

transmitting from a first RLC peer entity of the two RLC entities, a first RESET PDU with a first RLC side first HFN; and

canceling at a second RLC peer entity of the two RLC entities, transmission of a second RESET PDU when the second RLC peer entity receives the first RESET PDU before transmitting the second RESET PDU.

25. (Currently Amended) The failsafe RLC reset method of claim 24, wherein synchronizing the two RLC peer entities comprises:

setting at the second RLC peer entity, a second RLC side first HFN to a value equal to the first RLC side first HFN contained in the first RESET PDU upon reception of the first RESET PDU;

transmitting from the second RLC peer entity, an RESET ACK PDU with a second RLC side second HFN in response to the first RESET PDU;

increasing by 1 the second RLC side first HFN and a second RLC side second HFN of the second RLC peer entity; and

setting at the first RLC peer entity, a first RLC side second HFN to a value equal to the second RLC side second HFN contained in the RESET ACK PDU upon receipt of the RESET ACK PDU.

26. (Original) The failsafe RLC reset method of claim 23, wherein initiating a RLC reset procedure at each of the two RLC entities includes:

transmitting from a first RLC peer entity of the two RLC entities a first RESET PDU with a first RLC side first HFN; and

transmitting from a second RLC peer entity, a second RESET PDU with a second RLC side second HFN before receiving the first RESET PDU.

27. (Original) The failsafe RLC reset method of claim 26, wherein synchronizing the two RLC peer entities includes:

setting at the second RLC peer entity, a second RLC side first HFN to a value equal to the first RLC side first HFN contained in the first RESET PDU upon receipt of the first RESET PDU;

transmitting from the second RLC peer entity, a first RESET ACK PDU with a second RLC side second HFN in response to the first RESET PDU;

setting at the first RLC peer entity, a first RLC side second HFN to a value equal to the second RLC side second HFN contained in the second RESET PDU upon receipt of the second RESET PDU;

transmitting from the first RLC peer entity, a second RESET ACK PDU with the first RLC side first HFN in response to the second RESET PDU;

setting at the first RLC peer entity, the first RLC side second HFN to a value equal to the second RLC side second HFN contained in the first RESET ACK PDU upon receipt of the first RESET ACK PDU;

increasing by 1 the first RLC side first HFN and first RLC side second HFN of the first RLC peer entity;

setting at the second RLC peer entity, the second RLC side first HFN to a value equal to the first RLC side first HFN contained in the second RESET ACK PDU upon receipt of the second RESET ACK PDU; and

increasing by 1 the second RLC side first HFN and the second RLC side second HFN respectively at the second RLC peer entity.

28. (Original) The failsafe RLC reset method of claim 26, wherein synchronizing the two RLC peer entities includes:

setting at the second RLC peer entity, a second RLC side first HFN to a value equal to the first RLC side first HFN contained in the first RESET PDU upon receipt of the first RESET PDU;

transmitting from the second RLC peer entity, a first RESET ACK PDU with a second RLC side second HFN in response to the first RESET PDU;

increasing by 1 the second RLC side first HFN and the second RLC side second HFN respectively at the second RLC peer entity;

setting at the first RLC peer entity, a first RLC side second HFN to a value equal to the second RLC side second HFN contained in the second RESET PDU upon receipt of the second RESET PDU;

transmitting from the first RLC peer entity, a second RESET ACK PDU with a first RLC side first HFN in response to the second RESET PDU;

increasing by 1 the first RLC side first HFN and the first RLC side second HFN at the first RLC peer entity;

setting at the first RLC peer entity, a first RLC side second HFN to a value equal to the second RLC side second HFN contained in the first RESET ACK PDU upon receipt of the first RESET ACK PDU;

increasing by 1 only the first RLC side second HFN at the first RLC peer entity;
setting at the second RLC peer entity, the second RLC side first HFN to a value equal to the first

RLC side first HFN contained in the second RESET ACK PDU upon receipt of the second RESET ACK PDU; and

increasing by 1 only the second RLC side first HFN at the second RLC peer entity.

29. (Original) The failsafe RLC reset method of claim 26, wherein synchronizing the two RLC peer entities includes:

setting at the second RLC peer entity, a second RLC side first HFN to a value equal to the first RLC side first HFN contained in the first RESET PDU upon receipt of the first RESET PDU;

increasing by 1 the second RLC side first HFN and a second RLC side second HFN at the second RLC peer entity;

transmitting from the second RLC peer entity, a first RESET ACK PDU with a second RLC side second HFN in response to the first RESET PDU;

setting at the first RLC peer entity, a first RLC side second HFN to a value equal to the second RLC side second HFN contained in the second RESET PDU upon receipt of the second RESET PDU;

increasing by 1 the first RLC side first HFN and the first RLC side second HFN at the first RLC peer entity;

transmitting from the first RLC peer entity, a second RESET ACK PDU with the first RLC side first HFN in response to the second RESET PDU;

setting at the first RLC peer entity, the first RLC side second HFN to a value equal to the second RLC side second HFN contained in the first RESET ACK PDU upon receipt of the first RESET ACK PDU;

increasing by 1 the first RLC side first HFN and the first RLC side second HFN respectively at the first RLC peer entity;

setting at the second RLC peer entity, the second RLC side first HFN to a value equal to the first RLC side first HFN contained in the second RESET ACK PDU upon receipt of the second RESET ACK PDU; and

increasing by 1 the second RLC side first HFN and the second RLC side second HFN at the second RLC peer entity.

30. (New) The system according to claim 21, wherein the first initial synchronization message and the second initial synchronization message are RESET PDUs.